SELENANTHIAS MYERSI, A NEW SPECIES OF ANTHIINE FISH (PERCIFORMES: SERRANIDAE) FROM THE WESTERN PACIFIC

by

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ABSTRACT. - The anthiine fish *Selenanthias myersi* is described from three specimens from the South China Sea off Viet Nam taken by trawl in 110-200 m and one from Guam in 220 m. It is distinguished from the only other species of the genus, *S. analis* Tanaka from Japan and Taiwan, by having 22 instead of 19-21 lower-limb gill rakers, a narrower interorbital, and no large black spot posteriorly on the anal fin.

RÉSUMÉ. - L'Anthiiné *Selenanthias myersi* est décrit à partir de trois spécimens capturés au chalut à 110-220 m de profondeur au large du Vietnam, sud de la mer de Chine, et d'un spécimen de Guam, pêché à 220 m. Cette nouvelle espèce se distingue de l'autre espèce du genre, *S. analis* Tanaka, du Japon et de Taiwan, par 22 branchiospines sur la partie inférieure des arcs branchiaux au lieu de 19-21, par un interorbitaire plus étroit et par l'absence de grande tache noire sur la partie postérieure de la nageoire anale.

Key-words. - Serranidae, *Selenanthias myersi*, IW, New species.

The anthiine fish *Selenanthias analis* was described as a new genus and species by Tanaka (1918: 516, fig. 385) from a single specimen 137 mm in total length obtained at the Tokyo Fish Market. Kamohara (1952) listed the species from Shikoku, commenting only that it is very rare; he gave the length as 80-170 mm.

Katayama (1960) characterized the genus as follows: a rudimentary supramaxilla; the posterior process of the premaxilla extending between the frontals; a triangular patch of teeth on the vomer; villiform teeth in the jaws with a pair of small canines anteriorly and an inner backward-directed pair on each side medially in the jaws; side of the lower jaw with one or two strongly recurved canines; a short high cranium; a broad flat interorbital space; a large urohyal, longer than the hyoid body; 28-29 gill rakers; edge of preopercle, subopercle, and interopercle serrate, but no antrorse spines on lower edge of the preopercle; head fully scaled except for preorbital and lips; dorsal rays X,17, the fin not deeply notched between spinous and soft portions; anal rays III,7; caudal fin emarginate with an upper filamentous ray.

Color illustrations of *Selenanthias analis* have appeared in Masuda *et al.* (1975: pl. 50, fig. A, 120 mm SL, from southern Japan), Shen (1984: pl. 41, fig. 289-32, 167 m SL, from Taiwan), and Lee (1990: fig. 23, 110 mm SL, from Taiwan). It is orange-red with scattered small white to pale blue spots on body, a broad yellow band from lower side of snout to upper corner of preopercle, a large yellow spot dorsally on opercle, a deep red spot

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larger than pupil at rear base of spinous portion of dorsal fin, and a large black spot posteriorly on anal fin (black spot seems to have been touched off of Shen's photograph).

While examining unidentified specimens of serranid fishes at the California Academy of Sciences, the author came upon a specimen of *Selenanthias* caught by trawl in the South China Sea off Viet Nam in 1960 which was recognized as a new species. Later a second specimen was sent to him by Robert F. Myers from Guam. Two more specimens from the South China Sea were found on loan to Phillip C. Heemstra of the J.L.B. Smith Institute of Ichthyology from the U.S. National Museum of Natural History, one of which was cleared and stained. The purpose of the present paper is to describe this species.

MATERIALS AND METHODS

The holotype is deposited in the California Academy of Sciences, San Francisco (CAS), the paratype from Guam at the Bernice P. Bishop Museum, Honolulu (BPBM), and two paratypes from the South China Sea at the U.S. National Museum of Natural History, Washington D.C. (USNM). The smaller of the two USNM paratypes was cleared and stained by Phillip C. Heemstra and remains on loan to him. He provided meristic and other data from the specimen. Data in parentheses in the description below apply to the paratypes. Specimens of *Selenanthias analis* from the following institutions were examined: Bishop Museum, Honolulu, and Department of Zoology, Faculty of Science, Kochi University, Kochi City (BSKU).

Standard length (SL) is the horizontal straight-line distance from the most anterior point of the upper lip to the base of the caudal fin (end of hypural plate); body depth is the greatest depth from the base of the dorsal spines; body width is the width just posterior to the gill opening; head length is measured from the front of the upper lip to the posterior end of the opercular flap; snout length is taken from the front of the upper lip to the fleshy edge of the orbit; orbit diameter is the greatest fleshy diameter; interorbital width is the least bony width; caudal peduncle depth is the least depth, and caudal peduncle length the horizontal distance from the base of the last anal ray to the caudal-fin base; spine and ray lengths are measured from their extreme bases; caudal concavity is the horizontal distance between the tips of the longest and shortest caudal rays. Pectoral-ray counts include the uppermost rudimentary ray; gill raker counts are taken on the first gill arch and include all rudiments; the raker at the angle is contained in the lower-limb count.

SELENANTHIAS MYERSI N. SP.

(Fig. 1, Table I)

Material examined

Holotype. - CAS 53554, female, 58.6 mm SL, South China Sea, off Viet Nam,15°40'N, 109°25'30"E, 110-200 m, 3 m beam trawl, Scripps NAGA 60-212, MV "Stranger", R. L. Bolin, 27 February 1960.

Paratypes. - USNM 276253, 2: 77.1-87.0 mm SL, South China Sea, Macclesfield Bank, 16°13'N, 114°41'E, 150-157 m, trawl, "Cape St. Mary", Station 60, W.L. Chan, 20 June 1964; BPBM 30360, female, 61.3 mm SL, Mariana Islands, Guam, Cetti Bay, 220 m, 6 June 1972;

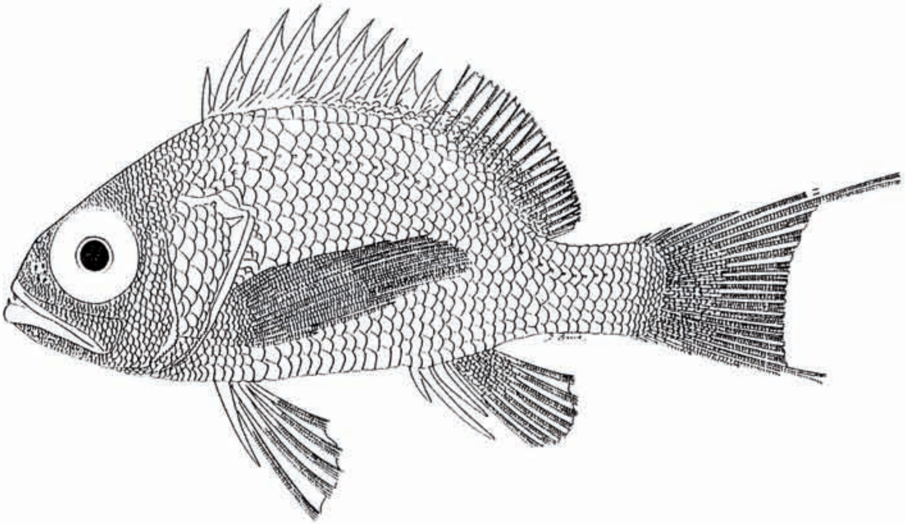

Fig. 1. - Holotype of *Selenanthias myersi*, CAS 53554, 58.6 mm SL, South China Sea (Lori Grove).

Diagnosis. - Dorsal rays X,16 or 17; pectoral rays 15 or 16; lateral-line complete, the pored scales 33-37; head fully scaled; gill rakers 9-11 + 22; preopercular margin serrate, without antrorse spines on ventral edge; body deep, the depth 2.35-2.4 in SL; eye large, the orbit diameter 2.75-3.2 in head; interorbital space flat, the width 4.3-4.5 in head; caudal fin slightly emarginate with a filamentous second branched ray; color in alcohol uniform light brown.

Description. - Dorsal rays X,17 (16); anal rays III,7; all dorsal and anal rays branched, the last to base; pectoral rays 16 (15-16), all rays branched except upper two and lowermost; pelvic rays I,5; branched caudal rays 8 + 7; upper and lower simple segmented caudal rays 3; upper and lower procurrent caudal rays 6; lateral-line scales 37-35 (33-35), a pored scale above and slightly anterior to first lateral-line scale not counted; scales above lateral line to origin of dorsal fin 4; scales above lateral line to base of middle dorsal spines 2; scales below lateral line to origin of anal fin 10; circumpeduncular scales 18; diagonal rows of scales on cheek 6; gill rakers 9 + 22 (9-11 + 22), all except first and last developed (i.e., higher than width of raker base); pseudobranchial filaments 18 (19-21); vertebrae 10 + 16; supraneural (predorsal) bones 3, their arrangement with neural spines and dorsal pterygiophores as follows: 0/0+0/2/1+1/1/ (where 0 is a supraneural bone, / is a neural spine, and numerals are dorsal pterygiophores).

Body deep, the depth 2.4 (2.35-2.65) in SL, and compressed, the width 2.1 in depth; head length 2.4 (2.35-2.45) in SL; dorsal profile of head convex; snout short 4.6 (4.1-4.7) in head; eye large, the orbit diameter 2.8 (2.75-3.2) in head; interorbital space flat and broad, the least bony width 4.3 (4.5) in head; depth of caudal peduncle 3.25 (3.2-3.3) in head; length of caudal peduncle 2.35 (2.3-2.45) in head.

Mouth moderately large, the maxilla reaching to below posterior edge of pupil, the upper jaw length 2.15 (2.2) in head; mouth oblique, the lower jaw projecting, the gape forming an angle of about 30° to horizontal axis of body; posterior edge of maxilla slightly convex; greatest depth of maxilla 2.1 in orbit diameter; upper jaw with a band of villiform teeth in about 7 or 8 irregular rows anteriorly, narrowing to one posteriorly, the inner teeth at front of jaw enlarged and recumbent, the most medial much the largest and strongly angling inward; a stout fixed canine anteriorly at each corner of upper jaw; symphyseal gap between anterior pair of canines contained 2.5 times in orbit diameter; lower jaw with a band of inward-projecting villiform teeth in about five or six rows anteriorly, narrowing to one posteriorly, the inner symphyseal teeth enlarged and recumbent; a small stout canine on each side at front of lower jaw which juts outward and slightly lateral; a large recurved

Table I. - Proportional measurements of specimens of *Selenanthias myersi* expressed as a percentage of the standard length.

	Holotype CAS 53554	Paratype BPBM 30360	Paratype USNM 276253
Standard length (mm)	58.6	61.3	87.0
Body depth	42.0	42.7	39.0
Body width	20.0	20.4	18.7
Head length	42.1	42.8	40.7
Snout length	9.2	9.1	9.9
Orbit diameter	15.1	15.6	12.7
Bony interorbital width	9.7	9.5	9.1
Upper jaw length	19.6	19.3	18.6
Caudal peduncle depth	13.0	13.0	12.8
Caudal peduncle length	18.0	17.6	17.6
Predorsal length	40.6	40.7	39.1
Preanal length	68.0	68.2	68.8
Prepelvic length	39.2	38.2	40.2
Dorsal fin base	60.1	59.4	56.2
First dorsal spine	8.9	8.7	8.2
Longest dorsal spine	21.5	20.0	18.4
Tenth dorsal spine	13.2	13.0	13.0
Longest dorsal ray	broken	18.2	17.8
Anal fin base	17.9	18.1	17.2
First anal spine	10.1	9.8	10.0
Second anal spine	19.7	19.6	18.4
Third anal spine	17.2	17.6	17.3
Longest anal ray	23.9	23.0	25.3
Caudal fin length	broken	37.0	31.2
Caudal concavity	----	11.1	7.8
Pectoral fin length	34.5	broken	30.7
Pelvic spine length	18.9	17.9	18.0
Pelvic fin length	29.2	29.4	35.6

canine tooth in outer row about half way back in lower jaw (with a smaller adjacent canine in front and behind canine on left side of paratype); a broad V-shaped patch of small villiform teeth in about three or four irregular rows on vomer (vomerine tooth patch of paratype nearly triangular in shape), the posterolateral teeth somewhat enlarged and inward-projecting; a narrow band of small villiform teeth in two or three irregular rows on palatines. Tongue narrowly triangular with rounded tip, the dorsal surface with indistinct small papillae. Gill raker at angle and adjacent one on lower limb the longest, the length 2.5 in orbit diameter. Lips with numerous tiny papillae. Pyloric caeca 5.

Three flat spines on opercle, the middle one longest, sharpest, most posterior, and slightly upcurved, its tip closer to lower than upper spine; upper spine most anterior, least developed, but still acute; margin of preopercle with 42 (43-62) serrae, becoming larger on rounded corner; anterior half of ventral margin of preopercle smooth on holotype and smallest paratype, the margin nearly fully serrate on largest paratype; no large retrorse spines on ventral margin of preopercle; margin of subopercle with 7 (6-7) serrae, and margin of interopercle with 11 (8-16) serrae; no serrae on first suborbital (lacrymal) of holotype and smallest paratype, but 5-7 very small serrae on largest paratype; opercular membrane produced to a pointed flap in alignment with middle spine. Exposed edge of supracapsula with 6 (5-8) serrae.

Anterior nostril a membranous tube in front of center of eye, about twice as high posteriorly, nearly reaching posterior nostril when laid back; posterior nostril an ovate opening with a slight rim (finely fringed on holotype), less than a nostril diameter from edge of orbit.

Lateral line complete, rising steeply from upper end of gill opening to below fourth dorsal spine, then nearly straight, parallel to base of spinous portion of dorsal fin, and descending beneath soft portion of fin to straight peduncular portion, ending at base of caudal fin. Scales ctenoid; head scaled except for lips, side of snout below nostrils and narrow suborbital region below anterior half of eye; scales progressively smaller anteriorly on head; a band of scales at base of dorsal fin, progressively higher posteriorly (on soft portion nearly half distance to outer edge of fin); band of scales much lower on anal fin, less than one-fourth length of longest rays; small scales on about basal half of caudal fin (many lost on both specimens); small scales basally on paired fins.

Origin of dorsal fin above second lateral-line scale; first dorsal spine 4.7 (4.9-4.95) in head; second dorsal spine nearly twice length of first spine; fourth dorsal spine longest (but third and fifth nearly as long), 1.95 (2.15-2.2) in head; tenth dorsal spine 3.2 (3.1-3.3) in head; sixth dorsal soft ray longest (broken in holotype, 2.3-2.35 in head of paratypes); origin of anal fin below base of first dorsal soft ray; first anal spine 4.2 (4.05-4.35) in head; second anal spine longest, 2.15 (2.2) in head; third anal spine 2.45 (2.35-2.4) in head; second anal soft ray longest, 1.75 (1.6-1.85) in head; caudal fin emarginate (many rays broken in holotype, 2.7-3.2 in SL of paratypes, the caudal concavity 3.85-5.2 in head); pectoral fins pointed, the eighth and ninth rays longest, 1.2 (1.3 in head of largest paratype, broken in other paratype) in head; origin of pelvic fins slightly anterior to upper base of pectoral fins; pelvic fins reaching to or beyond anus, their length 1.45 (1.1 in male paratype, 1.45 in female paratype) in head.

Color in alcohol uniform light brown. Color in life unknown.

Remarks. - The genus *Selenanthias* is closely related to *Plectranthias* Bleeker (species revised by Randall, 1980). In addition to the characters given in the key to Anthiinae of Japan by Katayama (1960) to separate these two genera, mention should be made of the pair of anterior canines in the lower jaw of the species of *Selenanthias*; they are short, stout, and project obliquely outward and laterally, much like the lower canines of the genus *Pseudanthias* Bleeker.

The new species of *Selenanthias*, the second of the genus, is named *S. myersi* in honor of Robert F. Myers who recognized the Guam specimen as undescribed and sent it to the Bishop Museum.

Selenanthias myersi differs from *S. analis* in having 22 instead of 19 to 21 lower-limb gill rakers; a narrower interorbital space (width 4.3-4.5 in head, compared to 3.45-3.8 for *S. analis*), and no black spot posteriorly on the anal fin (present in both sexes of *S. analis*). It appears to be a smaller species. The holotype (58.6 mm SL) and smallest paratype (61.3 mm SL) are mature females, and the largest paratype (87 mm SL) is a mature male. *S. analis* is recorded to 167 mm SL.

The trawl haul in 110-200 m off Viet Nam, which included the holotype of *S. myersi*, had numerous crinoids, crustaceans, molluscs, echinoderms, and 16 other species of fishes: *Raja* sp., one torpedinid, two apodal eels, one macrourid, one pleuronectid, one sparid, *Branchiostegus* sp., two scorpaenids, one bembradid, one platycephalid, one brotulid, and three ogcocephalids (from field data sheet on file at California Academy of Sciences).

Fourmanoir (1973: 34, fig. 1) recorded three postlarval specimens of *Selenanthias* sp. from the vicinity of Banaba (Ocean Island), two from 1°5'S, 169°54'E and one from 1° 48'S, 169°43'E, and illustrated the largest (13 mm SL). His count of 43 lateral-line scales, plus 2 on the caudal-fin base, if correct, suggests the existence of a third species of the genus.

Material of *Selenanthias analis* examined. - BPBM 35785, 94 mm, intersex?, Hengchun, Taiwan; BPBM 35786, 2: 92-100 mm, males, and BPBM 35787, 96 mm SL, male, Chungchou, Taiwan; BSKU 9245, 112 mm, male, southern Japan.

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